

Every year there is a regular program of insect music, beginning the latter part of May or the first of June with the chirps of that group of *Gryllus assimilis* that winters in a nymphal stage. Later, about the first of July, the tree crickets mature and their commingled notes from now on form that continuous sound heard every night till cold weather. Against this background the notes of other species are heard rather as individual songs than as parts of the general chorus. These include the notes of the various members of the katydid family and those of other crickets. The true katydid is generally found only in undisturbed woods and is not commonly a member of the dooryard troupe either in town or in open country places.

The daylight singers include the cicadas, a few of the grasshoppers, and many species of katydids and crickets that sing both by day and by night.

The principal singing insects belong to three families of the Orthoptera, the Acrididae, the Tettigoniidae, and the Gryllidae, and to the Cicadidae of the Hemiptera. Many others make squeaking or rasping sounds of various sorts, but they are not often heard.

The grasshoppers or locusts (Acrididae) make their notes by scraping the hind femora over the tegmina. The katydids (Tettigoniidae) and the crickets (Gryllidae) produce their sounds by rubbing over each other the basal parts of the wings on which are situated the stridulating organs. In the katydids the file is usually developed on the left wing only and these insects always keep the left wing uppermost. The crickets, on the other hand, usually keep the right wing uppermost, though the file is equally developed on each wing. Exceptions occur in *Gryllus assimilis*, some individuals of which are "left handed."

The cicadas produce their notes by special tympana situated on the sides of the first abdominal segment, which are set into vibration by special muscles. The sound is reinforced by the great air chamber of the abdomen and by membranes on the lower part of the first abdominal segment.

There is not sufficient evidence at hand to substantiate the common idea that the song of the male insect is in itself attractive to the female or that the singing of the male is directly excited by a desire for the female. The sound of the singing probably lets the female know the whereabouts of the male, but, in some of the crickets at least, the female is lured to the male by a liquid exuded on the back of the metathorax of the male while he is singing. On the other hand common observations furnish evidence that male crickets sing when they are not in a matrimonial mood, and at times when the presence of the female is even an annoyance to them. The presence of another male is a much surer excitation to song than the presence of a female. (*Author's abstract.*)

A. G. BÖVING: *The historical development of the term "triungulin."* The first instar of blisterbeetles has been known far back in the past. Goedart in 1667 and Frises in 1727 described and correctly determined it. Linnaeus and Raaumur, however, took it as an apterous insect, placed it in the genus *Pediculus*, and named it *Pediculus apis*. Fabricius followed Linnaeus, but deGeer, who reared it from eggs, plainly stated that *Pediculus apis* L. is a first instar Meloid-larva. Since then several authors at different times have confirmed his statements as to the origin of the parasite. It is however interesting to note that many of the most prominent entomologists repeatedly took reservations, and by pure speculation maintained the idea that it belonged to the apterous hexapods. Among those are Kirby (1802) and Dufour, who in 1828 carried the idea of Linnaeus and Kirby one step further,

classifying the parasites in a distinct genus *Triungulinus* between *Pediculus* and *Racinus*; and almost one hundred years from the time of Reaumur Westwood still upholds the faulty interpretation. Through Serville's, and especially Newport's, investigations the more than hundred-year old discussion was settled in favor of the first discoverer and describer of the natural history of the blisterbeetles, Goedart.

Since Dufour proposed the name *Triungulinus* for what he considered as a genus of Aptera the first instars of Meloid larvae have often been called triungulins. This name, however, is not suitable, partly because only a small minority of Meloid larvae have the characteristic armature of three claws at the end of the tibia, partly because this armature really is to be interpreted as a single median claw-shaped or spathulate tarsus with two strong setae laterally at base, and partly because the triunguline armature is not restricted to larvae of the family Meloidae but lately has been found also in a larva of the family Lampyridae, collected by Dr. Mann in Bolivia in 1921 and now preserved in the National Museum. Newport and Fabre never use the term "triunguline," but always the term primary larva for the first instar of Meloid larvae, and the greatest living authority on that family, Dr. A. Cros, has adopted this same term, and in a special very interesting article (1917) set forth how inadvisable the continued usage of the term "triungulin" is.

Dr. M. C. HALL, Bureau of Animal Industry: *Lesions due to the bite of the wheel-bug, Arilus cristatus (Hemiptera; Reduviidae)*. In the fall of 1922, the writer's youngest daughter (M. L. H.) aged 10, captured a wheel-bug, *Arilus cristatus* (determined by W. L. McAtee), at Chevy Chase, D. C., and was bitten twice by it on the inner aspect of the little finger of the right hand at a point near the nail. The bite was painful, about as much so as a bee sting, according to the child, and the finger felt hot to the touch. In the course of a few days growths resembling papillomata developed at the site of the punctures, the largest projecting as a small horn-like structure. Both of the growths persisted for months, the largest slowly disappearing between six and nine months after the infliction of the bite. The injured finger remained warmer than the other fingers during this period and, according to the patient, still feels warmer than the others a year later. The development of pronounced cutaneous growths after a bite appears not to have been reported as following the bite of members of the Heteroptera. Previous reports show that there may be transient or prolonged local inflammatory reactions at and near the site of the injury and more or less severe general reactions lasting a short time or persisting for almost a year.

Over 30 species of Heteroptera have been reported as attacking man, and probably many more than 30 attack man occasionally. At least 9 genera are reported as attacking man in North America; these genera include *Cimex*, *Opsicoetes* (*Reduvius*), *Apiomerus*, *Triphleps*, *Arilus* (the present note), *Conorhinus*, *Rasahus*, *Melanolestes*, and *Reduviolus*.

Dr. SCHWARZ said that he thought the wheel-bug bite was more painful than the sting of the honey-bee because the pain lasted for several days.

Dr. BALL said that he had received a bite on his finger from a water-bug, the effects of this bite lasting for 6 weeks.

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